

8 CHANNEL 10KHz 8085/NIM
PRE-DETERMINED TIMER

GENERAL DESCRIPTION -

The 8 channel pre-det is built into a dual width NIM module, and requires connections to + 6V, - 6V and + 24V, from a standard NIM bin. The module is driven by the 100 KHz AGS timing signal which is divided internally down to 10 KHz, giving a pulse output resolution of 100 μ sec. The module may also be driven from the 10 KHz AGS timing signal or from a continuous 100 KHz or 10 KHz signal using the external reset feature. The input frequency is rear panel switch selected to 100 KHz or 10 KHz.

Timing information entered through the keyboard is stored in a 256 x 8 bit RAM which has battery backup power so that timing information is not lost due to power failures of up to three (3) hours. Battery should be switched off during storage to prevent deep discharge and possible battery damage.

The front panel LED display indicates channel number and timing information while entering data and displays stored timing information while pre-det is running, stepping one channel for each AGS cycle. The pre-det will not be running while data is being entered.

TIMING -

Outputs are available from 100 μ sec after T_0 out to 3.9999 second in steps of 100 μ sec. T_0 output is not available. The LED displays shows time from 0 to .9999 seconds, and each channel has a switch to select in which second of the AGS cycle the output pulse will occur (from 1 to 4 seconds).

INITIAL START UP -

Connect 100 KHz input to rear panel. This signal may be daisy chained to other units, and should be terminated to 50 Ω on the last unit. Battery back up should be switched on. The module is self starting when power is applied. On initial start up the micro processor program sets all 8 channels to zero and enters the display mode so that timing data may be entered. Channel 1 will be displayed with a time of 0000. Data is then entered in a right entry format. For example: For a time 123.4 msec in channel 1 press the 1, 2, 3 and 4 keys in succession. When entry to channel 1 is complete press the 'scan'

button on the keyboard to advance to channel 2. When desired number of channels has been loaded press the 'go' button on the keyboard and pre-det will begin running. To return to display mode press the 'enter' button on keyboard stopping the pre-det, followed by the channel number you wish displayed. Timing data may now be updated in this channel or (by using the 'scan' button) in any of the other channels.

POWER FAILURES -

After a power failure of up to 3 hours the pre-det should restart itself and continue running with the last set of data entered, providing the battery backup has been switched on. If the 'channel on' LED's are flashing when power is restored the old data was valid and need not be changed. If the display comes on in the initial start up condition, new data must be entered as the old data was no longer correct. If the display comes on in an odd configuration press the 'program reset' button. The display should now go to the start up condition or the pre-det should begin running with the old valid data.

FRONT PANEL -

'Channel On' LED's - Light goes on when channel outputs a pulse and remains lit for the remainder of the input pulse train. All LED's go off when pre-det resets..

1 to 4 Second
Switches - Select which second of AGS cycle the pre-det pulse will occur in.

Program Reset - Restarts micro processor program.

15V Outputs - Supply a 0 to + 15V positive pulse of 2 μ sec width into 50 Ω , suitable for driving long coaxial cables.

TTL Outputs - Supply a .8 to + 4V positive pulse of 2 μ sec width for driving TTL inputs. Not suitable for driving cables over \sim 20 feet.

NIM Outputs

- Supply a 0 to -800 mV negative pulse of 2 μ sec width into 50 Ω , suitable for driving long coaxial cables.

External Reset Input

- TTL high level pulse required to reset pre-det to zero time. Pulse may be from an external device or from one of the TTL outputs of the pre-det using the timing desired. This input is used with continuous input drives so that pre-det channels can be reset after firing.

Rear Panel Drive
In/Out

- 100 KHz or 10 KHz pulse train of >3V positive amplitude. When using 100 KHz AGS timing signal the last module being driven should be terminated in 50 Ω .

100 KHz/10 KHz
Switch

- Switch should be set to correspond to the drive input frequency (normally 100 KHz when using the AGS timing signal).

Battery On/Off

- Switch should be turned on while pre-det is being used, so RAM timing data will be maintained during power outages. If pre-det is not in use, or power will be down for more than 8 hours the battery should be switched off to prevent deep discharging which can cause pre-mature battery failure. The battery will charge when pre-det is powered regardless of this switch position.